

replacement in high operative risk patients. The currently most widely used valves are Edwards SAPIEN XT and Medtronic CoreValve.

**Methods:** We analyzed data of 424 consecutive patients undergoing trans-femoral TAVI at the Tel Aviv Medical Center, and performed a comparison between the two bioprostheses regarding pre-procedural patient's characteristics, procedural data and 1 year post-procedural clinical outcome.

**Results:** CoreValve and the Edwards SAPIEN prostheses were implanted in 320 and 104 patients, respectively. CoreValve patients were older ( $83 \pm 5$  vs.  $81 \pm 7$  years,  $p=0.026$ ), with lower estimated glomerular filtration rate ( $60 \pm 18$  vs.  $66 \pm 20$  ml/min/1.73m<sup>2</sup>,  $p=0.009$ ), higher EuroSCORE ( $25 \pm 14$  vs.  $20 \pm 13$  %,  $p=0.015$ ) and a smaller pre-procedural aortic valve area ( $0.69 \pm 0.18$  vs.  $0.74 \pm 0.19$  cm<sup>2</sup>,  $p=0.035$ ). No other differences regarding patient's characteristics were observed. Compared to TAVI with Edwards prosthesis, Corevalve procedures had shorter fluoroscopy time ( $16.4 \pm 6$  vs.  $17.5 \pm 5$  minutes,  $p=0.02$ ), higher patient's cumulative radiation dose ( $1477 \pm 755$  vs.  $1197 \pm 591$  Gy,  $p<0.001$ ), and less contrast media ( $143 \pm 40$  vs.  $157 \pm 40$  ml,  $p=0.001$ ). Device success was similar among the two valves (95 vs. 96%,  $p=0.57$ ). Mortality (in hospital and after 1 year) was similar among the valves implanted ( $2.5$  vs.  $2.9\%$ ,  $p=0.83$ , and  $15.7$  vs.  $19\%$ ,  $p=0.54$ ). CoreValve patients had higher rates of permanent pacemaker implantation ( $24.4$  vs.  $11.5\%$ ,  $p=0.005$ ), and post-procedural blood transfusion ( $40$  vs.  $25\%$ ,  $p=0.014$ ). No difference was observed regarding vascular complication (18 vs. 21%,  $p=0.49$ ), stroke (1.3 vs. 1.9%,  $p=0.61$ ), moderate or severe paravalvular leak (2 vs. 2.6%,  $p=0.766$ ), or acute kidney injury of any stage (13.8 vs. 19.6%,  $p=0.15$ ).

**Conclusions:** Despite differences in patient's and procedural characteristics between CoreValve and Edwards Sapiens TAVI, device success and mortality rates were similar.

## TCT-763

### Clinical Profiles and Outcomes of Nonagenarians Undergoing Transcatheter Aortic Valve Replacement

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**Background:** Transcatheter aortic valve replacement (TAVR) is primarily performed in non-operable and high-risk surgical patients, including those of advanced age. The clinical profiles, procedural characteristics, and outcomes of nonagenarians undergoing TAVI have not been reported.

**Methods:** We evaluated 72 patients >90 years old with severe symptomatic aortic stenosis undergoing TAVR. Baseline characteristics at time of TAVR were collected which include co-existing conditions as well as periprocedural findings and Valve Academic Research Consortium-2 (VARC-2) complications. Death at 30-days and 1-year were also evaluated.

**Results:** The cohort represents 47% males (84% Caucasian; age  $93 \pm 2$  years) with mean Society of Thoracic Surgeons (STS) and EuroSCORE of  $12.3 \pm 4.6$  and  $26.8 \pm 22.5$ , respectively. Non-operable indication was 55%, and the majority received a balloon expandable valve (85%). While hypertension was very prevalent (92%), other STS risk factors were considerably lower than anticipated: diabetes (21%), COPD (17%; 4.5% severe), cerebral vascular disease (19%), peripheral arterial disease (27%), prior myocardial infarction (16%), prior coronary artery bypass (14%), or glomerular filtration rate < 60 mL/min (50%). Mean body mass index was  $23.9 \pm 3.7$  kg/m<sup>2</sup>. Transfemoral procedural duration was  $111.3 \pm 48$  minutes with VARC-2 device success of 95.9%. Post-TAVR length of stay was  $8 \pm 6$  days. High rates of major vascular complications were present and a large proportion of deaths occurred early (table).

### Adverse Events Following TAVR

In-Hospital	Outcomes
VARC-2 major vascular complication	15.5%
VARC-2 major bleed	2.7%
Ischemic stroke	2.7%
Pacemaker implantation	5.5%
Worsening heart failure	30.1%
Moderate or severe aortic insufficiency	1.6%
Death	6.8%
Death at 30-days	11.0%
Death at 1-year	26.0%

**Conclusions:** Despite high rates of 30-day mortality, survival at 1-year is similar to patients a decade younger, likely the result of a favorable pre-procedural health history in this cohort. Thus, TAVR should not be withheld from nonagenarians.

## TCT-764

### Abstract Withdrawn

## TCT-765

### Impact Of TAVI On Primary Hemostasis, Von Willebrand Factor And Heyde's Syndrome: A Prospective Monocenter Study

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**Background:** Aortic valve stenosis (AVS) can be complicated by bleeding associated with acquired type 2A von Willebrand syndrome. The association of AVS and gastrointestinal bleeding from angiodysplasia is defined as Heyde's syndrome. We sought to evaluate the impact of TAVI on primary hemostasis disorders and to assess its effectiveness to treat Heyde's syndrome.

**Methods:** We prospectively enrolled 49 consecutive patients with severe AVS addressed for TAVI in our institution. Biological primary hemostasis parameters were assessed at baseline and one week after the procedure.

**Results:** We identified 1 (2%) patient with Heyde's syndrome, and 11 patients (22.4%) with a ratio vWF:CB/vWF:Ag under 0.7, compatible with type 2A vWF syndrome. At baseline, a significant link between vWF abnormalities and the severity of AVS was evidenced: mean aortic transvalvular gradient was negatively correlated with the levels of vWF antigen (vWF:Ag) ( $r=-0.29$ ,  $p<0.05$ ), vWF ristocetin cofactor activity (vWF:RCO) ( $r=-0.402$ ,  $p=0.006$ ) and vWF collagen-binding activity (vWF:CB) ( $r=-0.441$ ,  $p=0.005$ ). One week after the procedure, a significant increase of vWF:Ag, vWF:RCO, and vWF:CB was evidenced in the whole cohort (respectively  $3.32$  vs  $2.29$  IU/mL,  $p<0.001$ ;  $2.98$  vs  $1.86$  IU/mL,  $p<0.001$ ;  $3.16$  vs  $2.16$  IU/mL,  $p<0.001$ ). Patients with pre-TAVI vWF abnormalities consistent with a type 2A vWF syndrome preferentially improved their vWF function with respect to patients with a normal ratio (relative increase of vWF:CB of 63.8% vs 3.5%).

**Conclusions:** Primary hemostasis parameters involving vWF are improved after TAVI, especially in patients with preexisting abnormalities consistent with acquired type 2A von Willebrand syndrome. Moreover, our observations, although limited to a small single-center study, suggest that Heyde's syndrome can be cured by TAVI.

## TCT-766

### Prevalence and prognostic significance of early left ventricular reverse remodeling in high-risk patients with severe aortic stenosis undergoing transcatheter aortic valve implantation

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**Background:** We sought to identify the prevalence and prognostic impact of left ventricular reverse remodeling (LVRR) in a non-selected high-risk patient population with severe aortic stenosis undergoing transcatheter aortic valve implantation (TAVI).

**Methods:** Two hundred thirty-nine consecutive patients undergoing TAVI were enrolled in our retrospective analysis between November 2008 and December 2013. LVRR was defined as a left ventricular ejection fraction increase of  $\geq 10$  U or a left ventricular ejection fraction of  $\geq 50\%$ , a decrease in indexed left ventricular end-diastolic diameter of  $\geq 10\%$  or indexed left ventricular end-diastolic diameter of  $\geq 33$  mm/m<sup>2</sup>, and an interventricular septum thickness  $\leq 11$  mm at 72 $\pm$ 58 days.

**Results:** LVRR was found in 44 patients (18%). When added to a prognostic baseline model including age, diabetes, baseline left ventricular ejection fraction and aortic valve area, emerged as independent predictor of long-term ( $1.7 \pm 1.4$  years) mortality (HR 0.28, 95%CI 0.13-0.62,  $p=0.002$ ), along with diabetes (HR 4.6, 95%CI 1.5-13.7,  $p=0.006$ ).

**Conclusions:** Early LVRR is a predictor of long-term clinical outcome.

## TCT-767

### Treatment of Bio-Prosthetic Valve Deterioration Using The Valve-in-Valve Technique

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**Background:** Trans-catheter heart valve implantation is a therapeutic option for the treatment of patients with bioprosthetic valve failure. We aim to describe our experience using this technique in the treatment of degenerated mitral, aortic and tricuspid bioprosthetic valves.